

## Early Insights from Hereditary Breast and Ovarian Cancer Risk Genetic Screening Pilot in Latvia

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**Introduction.** Approximately 80% of *BRCA1/2* positive breast and ovarian cancers are diagnosed at stages II-IV. Despite the availability of modern treatments, the associated morbidity, mortality and costs remain significant. Therefore, the identification of *BRCA1/2* carriers in a presymptomatic stage is the ultimate goal to improve the prognosis for individuals at risk of hereditary breast and ovarian cancer. In many countries family cascade testing is of limited effectivity due to different reasons. The aim of this study is to evaluate the feasibility of implementing a hereditary breast and ovarian cancer risk genetic population screening program in Latvia.

**Material and methods.** The Institute of Oncology Riga Stradins University (RSUIO), in collaboration with private companies, conducted a pilot study utilizing the digital engagement tool, Longenesis Engage. Eligible women who had previously consented to participate in breast cancer risk assessment projects on [skrinings.lv](http://skrinings.lv) were invited via email, as well as through an email campaign initiated by Lindex. They accessed detailed information on a digital platform and provided consent digitally. Participants, females aged 25-59 without a personal cancer history, completed family cancer history assessments and psychological questionnaires (PHQ9 and GAD-7). Participants then downloaded a laboratory referral form to collect a saliva sample at the nearest private laboratory. Samples were sent to RSUIO for comprehensive *BRCA1/2* testing. Negative results will be communicated digitally after completing follow-up questionnaires. In case of positive result, person will be contacted by phone and invited to visit clinical geneticist with following enrollment in the surveillance programme.

**Results.** Between September 4th and November 7th, 2023, a total of 3 438 invitation emails were sent as part of the research initiative. Of the recipients, 49% (1 686 out of 3 438) opened the email, and within this group, 54% (925 out of 1 686) visited the project's digital platform to access detailed project information. Of those who visited the platform, 64% (598 out of 925) provided informed consent, with the majority (86%) opting for a digital signature. By the end of the reporting period, 130 saliva samples had been received at the laboratory. This yields an overall response rate of 17% (598 out of 3 438) for the initial two months of the project.

**Conclusions.** The findings from this research initiative suggest that hereditary breast and ovarian cancer risk genetic population screening through digital communication channels is a viable approach. It is important to note that direct comparison with existing screening program percentages may not be straightforward due to the unique nature of this endeavour. While the results are promising, it is imperative to gather feedback and further refine the methodology.

Enhancements in email title and content, improved user-friendliness of the digital platform, targeted public relations efforts, and active involvement of family physicians and gynaecologists are potential strategies to augment the participation rate in future iterations of this screening program.

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